vaddio

Camera and Electronic Products for Integrators

Installation and User Guide

WALLVIEW™ CCU HD1 WITH HSDS™

Vaddio™ Quick-Connect™ CCU for the Sony® EVI-HD1 PTZ Camera

Figure 1:
WallVIEW CCU HD1 System with Camera, Wall Mount and EZIM CCU

OVERVIEW

The Vaddio WallVIEW Quick-Connect CCU (Figure 1) is built around the Sony EVI-HD1 high definition PTZ Camera. The WallVIEW Quick-Connect CCU HD1 allows the user to control the color output of the camera's image sensor, through both Red and Blue Gain knobs, as well as Iris and Gain levels and Aperture, to provide a higher quality image. The system uses high speed differential signaling (HSDS), an active transmission system that delivers low-loss, high-quality video over Cat. 5 cabling distances up to 500 feet. The WallVIEW Quick-Connect CCU HD1 system is capable of high definition (HD) or standard definition (SD) resolutions in a variety of screen configurations to fit most monitors. The EVI-HD1 is capable of either NTSC or PAL formats.

Other features on the CCU include the ability to store settings on two discrete Scene buttons, and buttons for Auto White Balance, One Push White Balance and Auto Iris. Like all Vaddio WallVIEW systems, the wall mount and mounting hardware is included.

INTENDED USE

Before installing the Vaddio WallVIEW CCU Camera System, please read the entire manual thoroughly. All Vaddio camera systems are designed for use indoors. Outdoor operation is not recommended, has not been tested, and could damage the camera and/or create a potentially unsafe operating condition. Use only the Vaddio PowerRite power supply provided.

SAVE THESE INSTRUCTIONS

The information contained in this manual will help you install the Vaddio WallVIEW CCU system. For reference, Vaddio keeps copies of Specifications, Installation and User Guides and most pertinent product drawings for the Vaddio product line on the website. These documents can be downloaded from www.vaddio.com free of charge.

IMPORTANT SAFEGUARDS

Read and understand all instructions before using. Do not operate any electrical device if it has been dropped or damaged. In this case, a Vaddio technician must examine the product before operating. To reduce the risk of electric shock, do not immerse in water or other liquids and avoid extremely humid conditions.

Use only the power supply provided with the Vaddio WallVIEW products. Use of any unauthorized power supply will void any and all warranties.

INFORMATION

For RS-232 control information, please see the full-length Technical Manual for the SONY EVI-HD1. This manual can be found either on the Vaddio or Sony website. Vaddio has also prepared a number of TechNotes, specifications and drawings designed to inform and educate integrators on the value and the specific uses of Vaddio products.

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UNPACKING

Carefully remove and identify the following parts for the WallVIEW CCU HD1 system:

- One (1) - Sony EVI-HD1 High Definition PTZ Camera
- One (1) - Vaddio EZCamera Interface Module CCU (EZIM CCU)
- One (1) - Vaddio EZIM CCU to HD Break Out Cable
- One (1) - Vaddio Quick-Connect CCU Universal (1-RU Rack Mountable)
- One (1) - Vaddio HD1 Wall Mount
- One (1) - Sony IR Remote Control
- One (1) - EZCamera Control Adapter (RJ-45 to DB-9)
- One (1) - 36V PowerRite Power Supply with AC Cord Set
- One (1) - 2-position Phoenix Connector for Tally
- Mounting Hardware
- Documentation
  - Vaddio Manual
  - Sony EVI-HD1 Manual

Optional Accessory:
SD Break Out Cable, Part Number 440-6207-000 (Female BNC to Male RCA adapter not included)

Wiring Diagram Example:

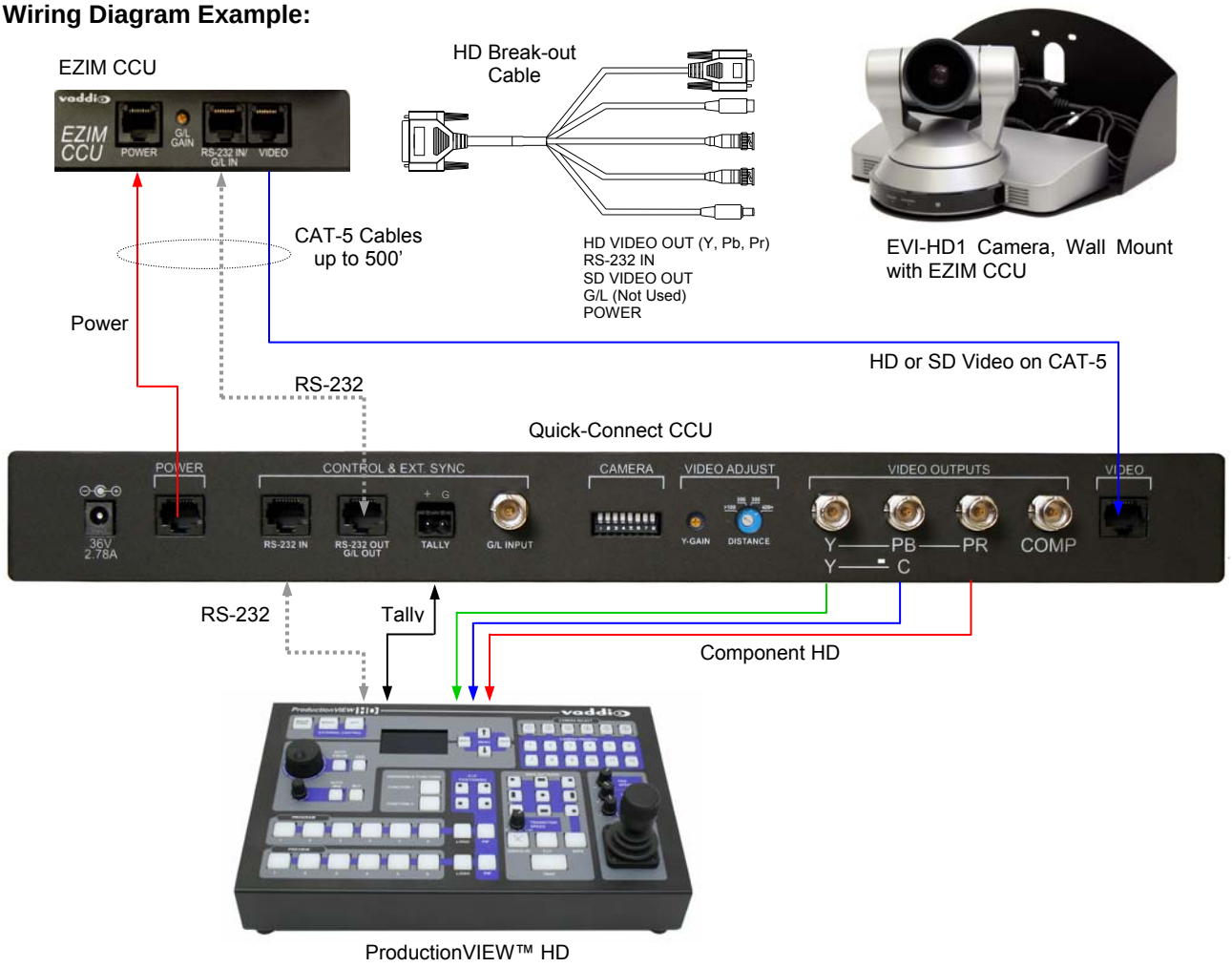


Figure 2: The Quick-Connect CCU System uses a Cat. 5 (all 4-pairs) for power to ensure the motors receive the required current to operate properly. The Video Cat. 5 cable uses all four pairs for video. The RS-232 Cat. 5 provides communication to the camera for CCU and PTZ control and G/L (where applicable) to the camera. These Cat. 5 cables can be run up to 500' (152.4m). See Appendix 1 for wiring and pin-out information. NOTE: A direct RS-232 Cat. 5 cable is required for each Quick-Connect CCU and camera. Daisy-Chain configurations are not supported.

Quick-Connect CCU Front Panel Controls (left to right):

Tally Light:
The blue LED tally light on the front panel is tied to the tally contacts on the rear panel allowing the user to easily track which camera interface is being used in a multi-camera system by supplying a simple contact closure (i.e. from ProductionVIEW Super Joystick or ProductionVIEW HD).

LCD Display:
Backlit (blue) display indicates which mode is active (CCU CONTROL or PTZ CONTROL) and the value of the parameter being adjusted. In CCU CONTROL mode, when a rotary encoder is touched, the name of the control being actuated and the value of that assigned parameter will be displayed.

CCU Control Switch:
Backlit (blue) SPDT switch, lit when activated, blocks the incoming PTZ controls on the RS-232 input and allows the end user to make adjustments to the camera image characteristics. When off or deactivated, PTZ information is throughput to the camera and the front panel controls of the QCCU are deactivated to avoid a control issue or latency created by a master control string filtering program.

Scene A and B:
Two camera adjustment scenes (A & B) can be stored into microprocessor memory. When lit (backlit blue SPDT switch), the scene is activated. To store a scene, the user adjusts the camera to taste and touches and holds the scene button down until the button blinks.

Red Gain Control:
The Red Gain encoder adjusts the red gain of the signal when AWB is disengaged.

Blue Gain Control:
The Blue Gain encoder adjusts the blue gain of the signal when AWB is disengaged.

AWB:
The Automatic White Balance controls/adjusts the color levels automatically when engaged. Turn off AWB to manually adjust the Red and Blue levels.

OPWB:
One-Push White Balance control allows the user to set the white balance with one push (the camera must see 60% of the image as white in order to operate). OPWB overrides AWB and Red/Blue controls when activated.

Aperture:
The Aperture control sharpens the image and adds detail to the edges of objects in the frame. When text is the subject matter, the Aperture control can help sharpen the image.

Auto Iris:
The Auto Iris mode automatically adjusts the iris and gain of the camera. To manually adjust the iris or gain, turn off this control.

Manual Iris:
The manual iris control allows the user to set the iris manual to one of the 18 settings available.

Gain:
The Gain control adjusts the overall gain of the camera. To manually adjust the gain Auto Iris must be off.

Unused Rotary Encoders:
There are three (3) unused encoders on the front panel for the EVI-HD1 and BRC-300 PTZ cameras.

Rear Panel Connections and Controls (left to right):

Power Supply Input:
36V 2.78 Amp power supply on a 5.5mm OD x 2.5mm ID connector.

Power on RJ-45:
Power is provided on a Cat. 5 cable to EZIM CCU.

RS-232 IN on RJ-45:
RS-232 Input from ProductionVIEW or PTZ controller. Daisy Chain control is not supported.

RS-232 OUT / G/L Out on RJ-45:
RS-232 and G/L outputs on Cat. 5 provide control and sync to the EZIM CCU.

Tally on 2-pin Phoenix type connector:
Contact Closure lights LED on front panel allowing indication of which QCCU/camera combination is active in a multi-camera/QCCU installation. A VISCA tally command will also be sent to the camera to illuminate the LED on the cameras that have on-board tally lights (BRC Series cameras).

G/L Input on BNC-F:
For use with black burst generators to externally sync the cameras. This input is transmitted through a differential amplifier to a receiver at the EZIM CCU. The G/L gain adjustment is on the EZIM CCU or the receive side of the signal. NOTE: This feature is not applicable with the EVI-HD1.

Camera Feature Switches:
The QCCU interface has an 8-position dip switch on the rear panel to allow future functionality. All switches should be in the down position.

Y-Gain:
Adjusts Y-Gain and allows the user to fine tune the video signal especially over longer cable lengths. Adjust to taste and system requirements.

Distance:
Distance Adjustments for Cat. 5 cable (<100', 200', 300', 400'+) equalizes the length of the twisted pairs for improved video performance.

Video Outputs:
Four Video Signals at any one time can be transmitted from the EZIM CCU concurrently allowing the CCU system to return HD and SD (composite video on cameras with simultaneous outputs, such as the BRC-Z700) at the same time.

Connector Labels and Supported Video Signals

Y/Y:	Y of YPbPr - or - Y (luminance) of Y/C on BNC-F connector
PB/C:	PB of YPbPr - or - C (chrominance) of Y/C on BNC-F connector
PR:	PR of YPbPr only on BNC-F connector
COMP:	Composite (CVBS) Video on BNC-F connector (in SD mode only with HD1)

Video RJ-45
Return of the camera's four (4) video signals from the EZIM CCU to the QCCU on Cat. 5 cable.

INSTALLATION

All WallVIEW products are specifically designed for installation on a vertical wall surface with Cat. 5 cable connectivity for Power, Video and Control signaling. Installation is simplified in that no custom 8-Pin mini-din cables or expensive S-Video plenum cables are needed and no power outlets are required near the camera bracket. All cabling is routed to the head-end using Cat. 5 cables.

Before Installing

- Find the appropriate camera mounting location, paying close attention to camera viewing angles, lighting conditions, possible line of site obstructions, and checking for in-wall obstructions where the camera is to be mounted. Pick a mounting location to optimize the performance of the camera.
- Pre-wire all cabling as required (see wiring diagram examples).
- The Thin Profile Wall Mount for the WallVIEW CCU HD1 can be mounted directly to a 2-gang wall box or can be mounted to drywall using four dry wall anchors.

MOUNTING INSTRUCTIONS

Step 1:

After determining the optimum location of the camera system, mark locations for the four screw holes and cable pass-thru (vertical oval). Install the drywall mounts and cut the hole for the cable pass-thru. At this point, do not install the Wall Mount.

Figure 3:
Thin Profile Wall Mount with oval cable feed-through hole. The wall mount may be mounted directly to a 2-gang wall box or to drywall with the appropriate wall anchors.

Step 2:

Install the wall mounting hardware, unless installation will be to a 2-gang electrical box.

Figure 4:
25-pin connector mounted to EZIM CCU (left) and EZIM CCU mounted to the Wall Mount (right)

Step 3:

Take the Wall Mount, and place it against the drywall anchors or 2-gang wall box, making sure to pull the Cat. 5 cables through the oval pass-through hole. Finger-tighten the screws down to the mount and confirm that the base is level. Tighten the screws down firmly once the wall mount is level. If the bracket is to be mounted on a 2-gang wall box, use the screws supplied with the electrical box.

Step 4:
Confirm that the Cat. 5 cables are terminated correctly, by testing them with a continuity tester. Next, take the EZIM, with break-out cable connected to the 25-pin connector and fasten it to the wall mount with the supplied screws (see Figure 4, right picture). Secure the camera to the mount and using the ¼"-20 screw.

Step 5:
Plug the Cat. 5 cables to the appropriate ports on the EZIM.

Step 6:
The Quick-Connect CCU is a 1-RU rack mount interface that breaks out the signals from the Cat. 5 cables back to the standard connectors. The basic system connectivity is illustrated in Figure 2.
Note: Plugging the POWER CAT-5 Cable into the wrong RJ-45 may cause damage to the camera system and void the warranty.

COMPLETING THE INSTALLATION:
Connect the Vaddio 36 VDC power supply to an AC outlet. Power will travel down the Power Cat. 5 cable to the cable shoe, powering the camera. The camera will "Home" to a centered position ready for control information from the provided IR Remote Commander or RS-232 Camera controller of the integrators' choice. To insure proper continuity of control and operation of the cameras, the RS-232 controller (control system or joystick) should be powered on after the camera.

Connecting the Tally Port (optional)
The CCU system is capable of illuminating a Tally light on the front of the 1 RU Quick-Connect enclosure. This light provides a visual indicator to the equipment operator to know which camera is live during a broadcast. In addition, on the BRC-300, BRC-Z700 and BRC-H700, the tally function will illuminate the tally light on the front of the camera lens, to allow the presenter to know which camera is live.

General Specifications

WallVIEW CCU HD1	
Part Numbers	WallVIEW CCU HD1 999-6307-000 (North America) WallVIEW CCU HD1 999-6307-001 (International)
• **Sony EVI-HD1**	
Image Device	1/3 type CMOS
Video Signal	1080i/59.94, 1080i/50, 720p/59.94, 720p/50, NTSC (LB, CR, SQ) or PAL (LB, CR, SQ) (switchable)
Effective Picture Elements	2 Megapixels (approximately)
Lens	10x Optical Zoom (40x with digital zoom)
Focal Length	f=3.4 to 33.9mm
Horizontal Viewing Angle	8 to 70 degrees
Video S/N Ratio	50 dB
Pan/Tilt Angle	-100 to +100 degrees (Pan), -25 to +25 degrees (Tilt)
• **Quick-Connect CCU Interface (QCCU)**	
Connectors	Power Connector: 5.5mm OD x 2.5mm ID Power RJ-45: Supplies 36V to EZCamera Interface Module Regulator Control In RJ-45: Accepts RS-232 from ProductionVIEW or other non-daisy-chain control systems Control Out RJ-45: Passes RS-232 and Sync video feed to camera EZIM Tally: 2-Pin Phoenix type spring cage connector Video Inputs: BNC Connector for Sync (not applicable with HD1) Video Outputs: BNC Connectors for HD Analog Component (Y,PB,PR) / SD (Y-C and Composite) Video RJ-45: Transports HD video from camera EZIM
Camera Feature Dip Switch	For Future Functionality
Video Adjustments	Y-Gain (luminance gain) for fine tuning over longer cable distances Distance Compensation: 100', 200', 300', 400'+
Cat. 5 Cable Distance	Up to 500' (152.4m)
Power Supply	36 VDC, 2.78 Amp
Dimensions	1-RU Rack Mount - 1.75" H x 19" W x 6" D (4.45 cm x 4.26 cm x 15.24 cm)
• **EZCamera Interface Module CCU (EZIM)**	
Connectors	Three (3) RJ-45 Connectors One DB-25 for Power, Video, Control & Gen Lock (n/a for HD1 camera)
Cable Assembly	For Sony HD1 Camera: DB-25M to DB-15HD, 8-Pin Mini Din, BNC x 2, EIAJ4 Power Connector * Optional SD Video Cable (with S-video and composite) Part # 440-6207-000
Power Regulator	Supplies 12VDC to Cameras
Dimensions	3" H x 4.5" W x 1.2" D (7.6 cm x 11.4 cm x 3 cm)
• **Thin Profile Wall Mount HD1**	
Materials	12-Gauge CRS with Black Powder Coat Paint
Dimensions	6" H x 11.75" W x 11" D (15.2 cm x 29.85 cm x 27.9 cm)
Weight	5.4 lbs. (2.5 kg)

FCC, ICES-003 Compliance and CE Declaration of Conformity

For Vaddio Quick-Connect CCU and EZIM CCU products

FCC Part 15 Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

Operation is subject to the following two conditions: (1) This device may not cause interference, and (2) This device must accept any interference including interference that may cause undesired operation of the device.

Changes or modifications not expressly approved by Vaddio can affect emission compliance and could void the user's authority to operate this equipment.

Industry Canada Industrie Canada

ICES-003 Compliance

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'emet pas de bruits radioélectriques dépassant les limites applicables aux appareils numeriques de la classe A préscrites dans le Règlement sur le brouillage radioélectrique édicte par le ministère des Communications du Canada.

European Compliance

This product has been evaluated for Electromagnetic Compatibility under the standards for Emissions and Immunity and meets the requirements for E4 environment. This product complies with Class A (E4 environment). In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

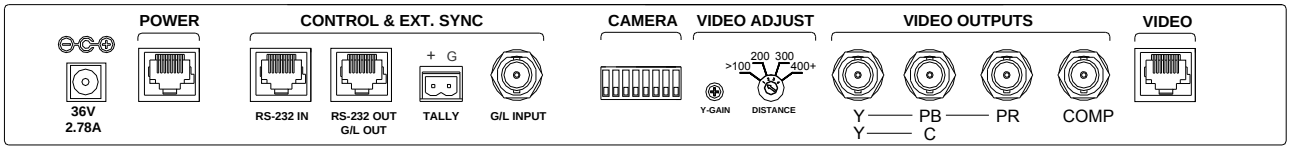
Standard(s) To Which Conformity Is Declared:

EMC Directive 89/336/EEC

EN 55022A	Conducted and Radiated Emissions
EN 55024	Electromagnetic Compatibility - Immunity
EN 61000-4-2	Electrostatic Discharge Requirements
EN 61000-4-3	Radiated Electromagnetic Field Requirement
EN 61000-4-4	Electrical Fast Transients / Burst Requirements
EN 61000-4-5	Surge Requirements
EN 61000-4-6	Conducted Immunity Requirements
EN 61000-4-8	Power Frequency Magnetic Field Requirements
EN 61000-4-11	Voltage Dips, Interrupts and Fluctuations Requirements

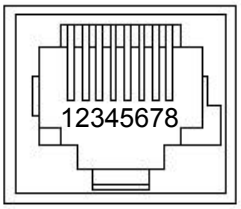
Appendix 1: Cable Pin-outs for the WallVIEW CCU System

Quick-Connect CCU Pin-out Assignments:



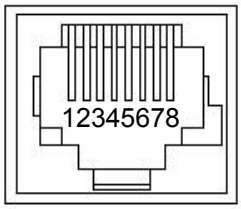
Power Connector RJ-45

Pin	Signal
1)	Power +
2)	Power -
3)	Power +
4)	Power -
5)	Power +
6)	Power -
7)	Power +
8)	Power -



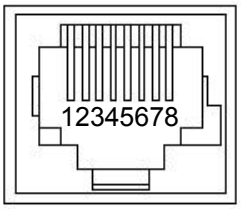
RS-232 IN Connector RJ-45

Pin	Signal - RS-232
1)	Not Used
2)	Not Used
3)	Not Used
4)	Not Used
5)	Not Used
6)	GND
7)	RXD (from TXD)
8)	TXD (to RXD)



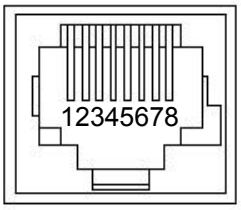
RS-232 / G/L OUT Connector RJ-45

Pin	Signal - RS-232
1)	Not Used
2)	Not Used
3)	Not Used
4)	G/L
5)	G/L GND
6)	GND
7)	TXD (to RXD)
8)	RXD (from TXD)

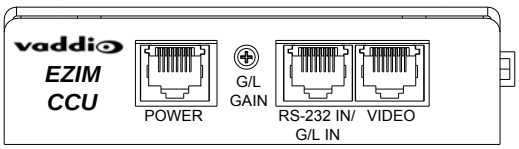


Video Connector RJ-45

Pin	Signal	
	SD	HD
1)	CVBS +	CVBS +
2)	CVBS GND	CVBS GND
3)	Y+	Y+
4)	C+	PB+
5)	C GND	PB GND
6)	Y GND	Y GND
7)	Not Used	PR+
8)	Not Used	PR-



EZIM CCU Pin-out Assignments



Power Connector RJ-45

Pin	Signal
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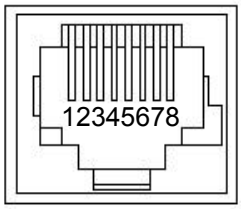
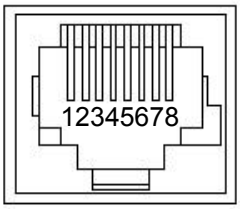
2)	Power -
3)	Power +
4)	Power -
5)	Power +
6)	Power -
7)	Power +
8)	Power -



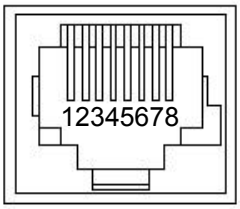
RS-232 IN Connector

Pin	Signal - RS-232
1)	Not Used
2)	Not Used
3)	Not Used
4)	G/L+
5)	G/L GND
6)	GND
7)	RXD (from TXD)
8)	TXD (to RXD)



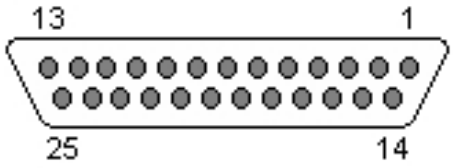
Video Connector RJ-45

Pin	Signal	
	SD	HD
1)	CVBS +	CVBS +
2)	CVBS GND	CVBS GND
3)	Y+	Y+
4)	C+	PB+
5)	C GND	PB GND
6)	Y GND	Y GND
7)	Not Used	PR+
8)	Not Used	PR-



DB-25 Connector

Pins	Signal
1	CVBS GND
14	CVBS
2	G/L GND
15	G/L
3	NC
16	GND IN
4	TXD IN
17	RXD IN
5	NC
18	NC
6	NC
19	NC
7	GND - PR
20	PR
8	GND - C/PB
21	C/PB
9	GND - Y/Y
22	Y/Y
10	GND - PWR
23	GND - PWR
11	GND - PWR
24	12V - PWR
12	12V - PWR
25	12V - PWR
13	12V - PWR



WARRANTY INFORMATION

Hardware* Warranty - One year limited warranty on all parts. Vaddio warrants this product against defects in materials and workmanship for a period of one year from the day of purchase from Vaddio. If Vaddio receives notice of such defects during the warranty period, they will, at their option, repair or replace products that prove to be defective.

Exclusions - The above warranty shall not apply to defects resulting from: improper or inadequate maintenance by the customer, customer applied software or interfacing, unauthorized modifications or misuse, operation outside the normal environmental specifications for the product, use of the incorrect power supply, improper extension of the power supply cable or improper site operation and maintenance.

Vaddio Customer service – Vaddio will test, repair, or replace the product or products without charge if the unit is under warranty and is found to be defective. If the product is out of warranty, Vaddio will test then repair the product or products. The cost of parts and labor charge will be estimated by a technician and confirmed by the customer prior to repair. All components must be returned for testing as a complete unit. Vaddio will not accept responsibility for shipment after it has left the premises.

Vaddio Technical support - Vaddio technicians will determine and discuss with the customer the criteria for repair costs and/or replacement. Vaddio Technical Support can be contacted through one of the following resources: e-mail support at support@vaddio.com or online at www.vaddio.com.

Return Material Authorization (RMA) number - Before returning a product for repair or replacement, request an RMA from Vaddio's technical support. Provide a technician with a return phone number, e-mail address, shipping address, and product serial numbers and describe the reason for repairs or returns as well as the date of purchase and proof of purchase. Include your assigned RMA number in all correspondence with Vaddio. Write your assigned RMA number on the shipping label of the box when returning the product. Please see Vaddio's website for current RMA policies and procedures.

Voided warranty – The warranty does not apply if the original serial number has been removed or if the product has been disassembled or damaged through misuse, accident, modifications, or unauthorized repair. Cutting the power supply cable on the secondary side (low voltage side) to extend the power to the device (camera or controller) voids the warranty for that device.

Shipping and handling - Vaddio will not pay for inbound shipping transportation or insurance charges or accept any responsibility for laws and ordinances from inbound transit. Vaddio will pay for outbound shipping, transportation, and insurance charges for all items under warranty but will not assume responsibility for loss and/or damage by the outbound freight carrier. If the return shipment appears damaged, retain the original boxes and packing material for inspection by the carrier. Contact your carrier immediately.

Products not under warranty - Payment arrangements are required before outbound shipment for all out of warranty products.

**Vaddio manufactures its hardware products from parts and components that are new or equivalent to new in accordance with industry standard practices.*

CARE AND CLEANING

- Do not attempt to take the products in the system apart. There are no user-serviceable components.
- Keep the devices away from food and liquid, and do not spill liquids on the products.
- For smears or smudges on the lens, wipe with a clean, soft cloth. Do not use any abrasive chemicals on the camera body at any time.

OPERATING AND STORAGE CONDITIONS

Do not store or operate the WallVIEW CCU System under the following conditions:

- Temperatures above 40°C (104°F) or below 0°C (32°F), for Indoor Use Only
- High humidity, condensing or wet environments
- Dusty environments
- In inclement weather
- Under severe vibration

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